0.a. Goal

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

0.b. Target

Target 2.a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries

0.c. Indicator

Indicator 2.a.1: The agriculture orientation index for government expenditures

0.d. Series

Primary series: Agriculture orientation index for government expenditures

Complementary series: Agriculture value added share of GDP (%)

Complementary series: Agriculture share of Government Expenditure (%).

0.e. Metadata update

2022-03-31

0.f. Related indicators

Indicators 17.1.1 and 17.1.2 also apply IMF GFS methodology.

0.g. International organisations(s) responsible for global monitoring

Food and Agriculture Organization of the United Nations (FAO)

1.a. Organisation

Food and Agriculture Organization of the United Nations (FAO)

2.a. Definition and concepts

Definition:

The Agriculture Orientation Index (AOI) for Government Expenditures is defined as the Agriculture share of Government Expenditure, divided by the Agriculture value added share of GDP, where Agriculture refers to the agriculture, forestry, fishing and hunting sector. The measure is a currency-free index, calculated as the ratio of these two shares. National governments are requested to compile Government Expenditures according to the Government Finance Statistics (GFS) and the Classification of the Functions of Government (COFOG), and Agriculture value added share of GDP according to the System of National Accounts (SNA).

Concepts:

Agriculture refers to the agriculture, forestry, fishing and hunting sector, or Division A of ISIC Rev 4 (equal to Division A+B of ISIC Rev 3.2).

Government Expenditure comprise all expense and acquisition of non-financial assets associated with supporting a particular sector, as defined in the Government Finance Statistics Manual (GFSM) 2014 developed by the International Monetary Fund (IMF). NOTE: Transactions in assets and liabilities, such as loans by general government units (disbursement and repayment), are excluded when compiling COFOG data for GFS reporting purposes.

Government Expenditure are classified according to the Classification of the Functions of Government (COFOG), a classification developed by the Organisation for Economic Co-operation and Development (OECD) and published by the United Nations Statistical Division (UNSD).

Agriculture value-added and GDP are based on the System of National Accounts (SNA).

2.b. Unit of measure

Index

See 4.c. Method of computation, below.

2.c. Classifications

The Classification of the Functions of Government (COFOG) is a detailed classification of the functions, or socioeconomic objectives, that general government units aim to achieve through various kinds of expenditure. Functions are classified using a three-level scheme, consistent with the International Standard Industrial Classification of All Economic Activities (ISIC), Rev.4. In particular, the scheme includes:

1. 10 first-level, or two digit, categories, referred to as divisions, including Economic Affairs (04) and Environmental Protection (05);
2. within each division, 2 or more 3-digit three-digit categories, referred to as groups, such as Agriculture, Forestry, Fishing, and Hunting (042) and Protection of Biodiversity and Landscapes (054); and
3. within each group, one or more four-digit categories, referred to as classes, such as Agriculture (0421), Forestry (0422) and Fishing and hunting (0423), as well as related Research and Development (0482), covering the administration and operation of government agencies engaged in applied research and experimental development related to the sector, including that undertaken by nongovernment bodies, such as research institutes and universities funded by government grants and subsidies.

The International Monetary Fund (IMF) questionnaire on Government Finance Statistics (GFS) collects annual data on the first two levels (divisions and groups). The FAO questionnaire aims at collecting information on classes, as well as a breakdown of the related expenditure in recurrent and capital expenditures. The three classification levels and the contents of each class are described in the GFSM 2014, accessible at https://www.imf.org/external/np/sta/gfsm/.

FAOSTAT geographic classification is used to aggregate indicators across country groups (http://www.fao.org/faostat/en/#definitions).

3.a. Data sources

Data on government expenditures is collected from countries through an annual questionnaire administered by FAO. These data are not affected by sampling error, given that countries typically compile the questionnaires administered by FAO on the basis of their financial and accounting systems, using administrative information on government expenditures based on the availability and comprehensiveness of source data. For some countries that do not report directly data to FAO, key expenditure aggregates needed to calculate Indicator 2.a.1 are obtained either from the IMF GFS database, from other regional organizations, or from official national governmental websites.

Data on agriculture value-added and GDP are retrieved from the UN Statistics Division, which provides national accounts estimates for 220 countries and territories.

3.b. Data collection method

Data for the denominator are annually collected from countries using the FAO questionnaire on Government Expenditure on Agriculture (GEA), developed in collaboration with the IMF., For countries with missing information, data is supplemented with data collected by the IMF, regional organizations or published on official national governmental websites. The official counterpart(s) at country level are, depending on the country, from the national statistics office, the ministry of finance (or other central planning agency), or the ministry of agriculture. Validation and consultation were conducted through various FAO commissions and committees, including its two agricultural statistics commissions in Africa and the Asia and Pacific, its Committee on Agriculture and Livestock Statistics in Latin America and the Caribbean, and its Committee on Agriculture.

3.c. Data collection calendar

The t-1 reference year data collection cycle for Government Expenditure on Agriculture (GEA) will start in March/April of year t. Due to the time required to collect, compile and publish national data, countries may experience delays in reporting timely data.

3.d. Data release calendar

As the COFOG data is largely compiled annually, this indicator is released every year in March, covering data up to reference year t-2 (for the countries for which data collection, compilation, release is more timely).

3.e. Data providers

Ministry of Finance, Central Planning Agency, Central Banks, National Statistics Office, and/or Ministry of Agriculture.

3.f. Data compilers

Food and Agriculture Organization of the United Nations (FAO)

3.g. Institutional mandate

Article I of the FAO Constitution requires the Organization to "collect, analyse, interpret and disseminate information relating to nutrition, food and agriculture." (http://www.fao.org/docrep/x5584e/x5584e00.htm). Member countries reaffirmed this mandate in 2000. Within the FAO's statistical program of work, member countries endorsed the development of an investment statistics domain, including ongoing work on government expenditure on agriculture, during meetings of three statutory bodies: the Asia and Pacific Commission on Agricultural Statistics (APCAS) held in Vietnam in February 2014; the African Commission on Agricultural Statistics (AFCAS) held in Morocco in December 2013; and the IICA working group on agricultural and livestock statistics for Latin America and the Caribbean, held in Trinidad and Tobago in June 2013.

4.a. Rationale

An Agriculture Orientation Index (AOI) greater than 1 reflects a higher orientation towards the agriculture sector, which receives a higher share of government spending relative to its contribution to economic value-added. An AOI less than 1 reflects a lower orientation to agriculture, while an AOI equal to 1 reflects neutrality in a government's orientation to the agriculture sector.

Government spending in agriculture includes spending on sector policies and programs; soil improvement and soil degradation control; irrigation and reservoirs for agricultural use; animal health management, livestock research and training in animal husbandry; marine/freshwater biological research; afforestation and other forestry projects; etc.

Spending in these agricultural activities helps to increase sector efficiency, productivity and income growth by increasing physical or human capital and/or reducing inter-temporal budget constraints.

However, the private sector typically under-invests in these activities due to the presence of market failure (e.g. the public good nature of research and development; the positive externalities from improved soil and water conditions; lack of access to competitive credit due to asymmetric information between producers and financial institutions, etc.). Similarly, the high risk faced by agricultural producers, particular smallholders unable to hedge against risk, often requires government intervention in terms of income redistribution to support smallholders in distress following crop failures and livestock loss from pests, droughts, floods, infrastructure failure, or severe price changes.

Government spending in agriculture is essential to address these market failures and the periodic need for income redistribution. This leads to several potential indicators for the SDGs, which include: a) the level of Government Expenditure on Agriculture (GEA); b) the Agriculture share of Government Expenditure, and c) the AOI for Government Expenditures.

An indicator that measures GEA levels fails to take into account the size of an economy. If two countries, A and B, have the same level of GEA, and the same agriculture contribution to GDP, but country A's economy is 10 times that of country B, setting the same target levels for GEA fails to take economic size into account.

An indicator that measures the Agriculture share of Government Expenditure fails to take into account the relative contributions of the agricultural sector to a country's GDP. Consider two countries with the same economic size, C and D, where agriculture contributes 2 percent to C's GDP, and 10 per cent to country D's GDP. If total Government Expenditures were equal in both countries, C would experience greater relative investment in Agriculture than D. If total Government Expenditures differed, the result could be magnified or diluted.

The AOI index takes into account a country's economic size, Agriculture's contribution to GDP, and the total amount of Government Expenditure. While the indicator does not allow setting of a universal and achievable target, it is useful to interpret the AOI in combination with its numerator and denominator separately: the Agriculture share of Government Expenditure and the Agriculture value-added Share of GDP.

4.b. Comment and limitations

Since the numerator of this data is based on financial and accounting systems and administrative sources, there is no confidence interval or standard error associated with government expenditure data. For the denominator, national accounts data typically do not provide any standard error or confidence interval information.

The key limitation with this indicator is that Consolidated General Government expenditure – the best measure for cross-country comparisons – is not available for all reporting countries. While most advanced economies – and many emerging market economies – do report these data, many smaller and/or low-income economies either do not have significant fiscal interventions in agriculture at the state/provincial and local/municipal levels; or do not have adequate source data to compile meaningful general government estimates for each subsector, as relevant. Given that in several countries, significant intervention in agriculture is implemented by sub-national governments, the Indicator 2.a.1 is calculated using the highest level of government available for the reporting country. For some countries, such as India, where the general government sector is defined for fiscal policy purposes as budgetary central government plus state government, the Indicator will take this into account.

Annex I lists the reporting countries, their M49 code, the latest year for which data are available and the level of government for which data has been reported. The level of government notation used is as follows: GG: Consolidated General Government; CG Consolidated Central Government (excluding Social Security Funds): CGI: Consolidated Central Government (including Social Security Funds); BA: Budgetary Central Government.

4.c. Method of computation

$$AOI = \frac{Agriculture\ Share\ of\ Government\ Expenditures}{Agriculture\ value\ added\ Share\ of\ GDP}$$

where:

Agriculture Share of Government Expenditures

$$= \frac{Government\ Expenditures\ on\ Agriculture}{Total\ Government\ Expenditures} \times 100$$

Agriculture refers to COFOG category 042 (agriculture, forestry, fishing and hunting); and

Agriculture value added Share of GDP

$$= \frac{Agriculture\ value\ added}{GDP} \times 100$$

Agriculture refers to the Division A of ISIC Rev 4 (agriculture, forestry, fishing and hunting), equal to Division A+B of ISIC Rev 3.2.

4.d. Validation

Countries are asked to validate and update historical questionnaire data that pre-populates their questionnaire. FAO validates data against the historical series, as well as data submitted to IMF, regional organizations and from country's websites.

4.e. Adjustments

FAO revises data only when historical revisions or missing historical data are provided by countries, the IMF or regional organizations or when they become available through the national authorities' websites. For example, prefilled questionnaires are sent out with reported data for t-2 through t-5, which countries are asked to review, revise where needed, and - to the extent possible – fill-in missing information. Conversion of values into millions is done as well.

4.f. Treatment of missing values (i) at country level and (ii) at regional level

At country level

Missing values of government expenditure in agriculture were forecasted using trends in GDP and 3 to 5 year moving averages of the share of agriculture in total expenditure. Forecasted values are employed to compute regional and global aggregates, but not presented at the national level.

At regional and global levels

Regional and global aggregates of were based on a mixture of data directly reported by countries (to FAO or IMF) and forecasts of missing values. For time series period, regional and global aggregates are computed on the basis of based on data as reported by countries and interpolations of missing values.

4.g. Regional aggregations

Global and regional estimates are compiled by first separately summing across countries the four individual components of the index: government expenditure on agriculture, total government expenditure, agriculture value-added, and GDP. These are added only for those countries in a region (or globally) for which all components are available, and the index is then calculated for this larger region.

4.h. Methods and guidance available to countries for the compilation of the data at the national level

Countries are requested to reference the IMF's Government Finance Statistics Manual (GFSM 2014), particularly Chapter 6 - Annex: Classification of the Functions of Government and Chapter 2 – Institutional Units and Sectors, available at https://www.imf.org/external/np/sta/gfsm.

4.i. Quality management

Comparisons of key aggregates reported in both the FAO GEA and IMF GFS questionnaires are periodically conducted in order to ensure consistency.

4.j. Quality assurance

The FAO Statistics Quality Assurance Framework is available at:
http://www.fao.org/docrep/019/i3664e/i3664e.pdf

4.k. Quality assessment

The quality of the data may vary considerably among countries, as not all of them apply the COFOG classification. In such cases, FAO seeks to validate reported aggregates against fiscal data published by national authorities' websites. Since 2012, the FAO Statistics Division also fields a detailed annual questionnaire on Government Expenditure on Agriculture that is pre-populated with key major aggregates reported to the IMF or identified by FAO. Where reported details diverge significantly from the pre-populated aggregates, queries are sent to national counterparts, to ensure the methodological quality, objectivity and reliability of the data submitted by countries.

5. Data availability and disaggregation

Data availability:

Data are reported for the highest level of government available (Consolidated general government, consolidated central government or budgetary central government) and are available for about 100 countries on a regular basis. In some cases (for example, India and Pakistan), data may reflect the general government sector as per national norm. That is, budgetary central government combined with state government.

Time series:

From 2001 forward

Disaggregation:

Since this indicator is based on national accounts data and total government expenditures, it does not allow for disaggregation by demographic characteristics or geographic location. However, where countries report expenditure data for the consolidated general government and it subsectors, disaggregation by level of government is possible.

6. Comparability/deviation from international standards

Sources of discrepancies:

When in-country compilation errors are identified and FAO has modified government expenditure data reported by countries, or where errors are found in comparison with the IMF GFS COFOG data or fiscal data published on national authorities' websites after querying to national respondents, there may be some difference between data reported by FAO and unrevised national figures.

7. References and Documentation

URL:

www.fao.org

References:

- FAOSTAT domain of Government Expenditure on Agriculture http://www.fao.org/faostat/en/#data/IG;
- IMF Government Finance Statistics Manual 2014 https://www.imf.org/external/np/sta/gfsm/.

2.a.1 metadata ANNEX I: Highest Level of Government Available – last updated 01 March 2022

Latest year	M49 code	Area	Level of government	Latest year	M49 code	Area	Level of government
2017	4	Afghanistan	GG	2020	214	Dominican Republic	BA
2020	8	Albania	GG	2020	218	Ecuador	BA
2018	12	Algeria	BA	2020	818	Egypt	GG
2020	24	Angola	GG	2020	222	El Salvador	GG
2020	28	Antigua and Barbuda	GG	2020	226	Equatorial Guinea	BA
2020	32	Argentina	CG	2019	233	Estonia	GG
2020	51	Armenia	GG	2018	748	Eswatini	BA

2020	36	Australia	GG	2019	231	Ethiopia	BA
2019	40	Austria	GG	2020	242	Fiji	BA
2020	31	Azerbaijan	GG	2019	246	Finland	GG
2020	44	Bahamas	BA	2019	250	France	GG
2019	48	Bahrain	BA	2020	270	Gambia	BA
2016	50	Bangladesh	BA	2020	268	Georgia	GG
2005	52	Barbados	BA	2020	276	Germany	GG
2019	112	Belarus	GG	2019	288	Ghana	BA
2019	56	Belgium	GG	2019	300	Greece	GG
2020	84	Belize	CG	2020	308	Grenada	GG
2020	204	Benin	BA	2020	320	Guatemala	GG
2020	64	Bhutan	BA	2019	324	Guinea	BA
2014	68	Bolivia (Plurinational State of)	GG	2017	624	Guinea-Bissau	BA
2020	72	Botswana	GG	2020	328	Guyana	BA

2020	76	Brazil	GG	2020	340	Honduras	BA
2020	100	Bulgaria	GG	2019	348	Hungary	GG
2019	854	Burkina Faso	BA	2019	352	Iceland	GG
2019	108	Burundi	BA	2019	356	India	GG
2020	132	Cabo Verde	CG	2020	360	Indonesia	GG
2019	124	Canada	GG	2009	364	Iran (Islamic Republic of)	CG
2020	140	Central African Republic	BA	2019	372	Ireland	GG
2020	152	Chile	GG	2020	376	Israel	GG
2019	156	China	GG	2019	380	Italy	GG
2019	344	China, Hong Kong SAR	GG	2020	388	Jamaica	CG
2019	170	Colombia	GG	2019	392	Japan	GG
2018	178	Congo	BA	2019	400	Jordan	BA

Latest year	M49 code	Area	Level of government	Latest year	M49 code	Area	Level of government
2019	184	Cook Islands	GG	2019	398	Kazakhstan	GG
2020	188	Costa Rica	GG	2020	404	Kenya	BA
2019	384	Côte d'Ivoire	BA	2020	412	Kosovo (Serbia)	GG
2019	191	Croatia	GG	2020	414	Kuwait	GG
2019	192	Cuba	CG	2020	417	Kyrgyzstan	GG
2019	196	Cyprus	GG	2019	418	Lao PDR	GG
2020	203	Czechia	GG	2019	428	Latvia	GG
2020	180	Dem. Rep. of the Congo	BA	2020	422	Lebanon	BA
2020	208	Denmark	GG	2020	426	Lesotho	BA
2019	212	Dominica	CG	2020	430	Liberia	BA
Latest year	**M49 code**	**Area**	**Level of government**	**Latest year**	**M49 code**	**Area**	**Level of government**
2019	440	Lithuania	GG	2020	662	Saint Lucia	BA
2020	442	Luxembourg	GG	2020	670	Saint Vincent and the Grenadines	BA

2019	450	Madagascar	BA	2020	882	Samoa	BA
2019	454	Malawi	BA	2019	678	Sao Tome and Principe	BA
2020	458	Malaysia	BA	2019	682	Saudi Arabia	BA
2018	462	Maldives	CG	2020	686	Senegal	BA
2019	466	Mali	BA	2020	688	Serbia	GG
2019	470	Malta	GG	2020	690	Seychelles	GG
2018	584	Marshall Islands	BA	2020	694	Sierra Leone	BA
2019	478	Mauritania	BA	2020	702	Singapore	GG
2020	480	Mauritius	GG	2019	703	Slovakia	GG
2020	484	Mexico	CG	2019	705	Slovenia	GG
2019	583	Micronesia (Federated States of)	BA	2020	90	Solomon Islands	BA
2020	496	Mongolia	GG	2019	706	Somalia	CG
2015	499	Montenegro	BA	2019	710	South Africa	GG

2020	504	Morocco	BA	2020	728	South Sudan	GG
2020	508	Mozambique	BA	2020	724	Spain	GG
2019	104	Myanmar	GG	2019	144	Sri Lanka	BA
2020	516	Namibia	BA	2019	275	State of Palestine	CG
2020	524	Nepal	BA	2018	729	Sudan	CG
2020	528	Netherlands	GG	2020	740	Suriname	BA
2020	554	New Zealand	GG	2019	752	Sweden	GG
2020	558	Nicaragua	CG	2019	756	Switzerland	GG
2019	562	Niger	BA	2019	762	Tajikistan	GG
2019	566	Nigeria	BA	2019	764	Thailand	GG
2020	807	North Macedonia	GG	2019	626	Timor-Leste	BA
2020	578	Norway	GG	2018	768	Togo	GG
2019	512	Oman	GG	2020	780	Trinidad and Tobago	CG
2020	586	Pakistan	GG	2017	788	Tunisia	BA

2018	585	Palau	BA	2020	792	Turkey	GG
2018	591	Panama	BA	2019	800	Uganda	GG
2019	598	Papua New Guinea	BA	2020	804	Ukraine	GG
2020	600	Paraguay	GG	2020	784	United Arab Emirates	BA
2020	604	Peru	GG	2019	826	UK of Great Britain and Northern Ireland	GG
2020	608	Philippines	BA	2020	834	United Republic of Tanzania	BA
2019	616	Poland	GG	2020	840	United States of America	GG
2019	620	Portugal	GG	2020	858	Uruguay	CG
2005	634	Qatar	BA	2019	860	Uzbekistan	GG
2019	410	Republic of Korea	CG	2019	548	Vanuatu	BA
2020	498	Republic of Moldova	GG	2014	862	Venezuela (Bolivarian Republic of)	CG

2019	642	Romania	GG	2020	704	Viet Nam	GG
2020	643	Russian Federation	GG	2014	887	Yemen	GG
2020	646	Rwanda	GG	2020	894	Zambia	BA
2019	659	Saint Kitts and Nevis	CG	2020	716	Zimbabwe	BA